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Clmpto

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Claims- 1-10 has been cancel

Add newly claims- 11-41

11. (New) A power supply unit comprising:

at least one storage battery comprising a plurality of circuits connected in series, each of the plurality of circuits including a first cell group and a second cell group connected in parallel, wherein said second cell group utilizes an electrolyzable electrolytic solution or generates recombinable gas; and

a charger/discharger for controlling charge/discharge of said storage battery adapted to charge said storage battery up to a voltage at which the electrolytic solution of said second cell group is electrolyzed, or to a voltage at which the generated gas is recombined;

wherein the first cell group includes lithium secondary cells or electrical double layer capacitors, and the second cell group includes lead cells, nickel hydrogen cells, nickel cadmium cells or fuel cells.

12. (New) A power supply unit according to claim 11, wherein said first cell group and said second cell group are connected in parallel through a current limiter.
13. (New) A power supply unit according to claim 11, wherein the at least one storage battery comprises a plurality of said storage batteries connected in parallel.
14. (New) A power supply unit according to claim 11, wherein a withstanding voltage of said first cell group is higher than a withstanding voltage of said second cell group.
15. (New) A power supply unit according to claim 11, wherein each of the plurality of circuits includes a plurality of said second cell groups connected in series.
16. (New) A power supply unit according to claim 11, wherein said first cell group and said second cell group share at least one component element.
17. (New) A power supply unit according to claim 16, wherein said shared component element is the electrolytic solution.

18. (New) A power supply unit according to claim 16, wherein at least one of said first cell group and said second cell group has an electrode formed of carbon fiber or carbon nanotube.

19. (New) A power supply unit according to claim 11, wherein:  
the first cell group of each of the plurality of circuits is connected to the first cell group of other circuits in series;

the second cell group of each of the plurality of circuits is connected to the second cell group of other circuits in series; and

the first cell group and the second cell group of each of the plurality of circuits are connected with an intermediate terminal.

20. (New) A power supply unit according to claim 15, wherein:  
the first cell group of each of the plurality of circuits is connected to the first cell group of other circuits in series;

the second cell group of each of the plurality of circuits is connected to the second cell group of other circuits in series; and

the first cell group and the second cell group of each of the plurality of circuits are connected with an intermediate terminal.

21. (New) A distributed power supply system comprising:

a storage battery comprising a plurality of circuits connected in series, each of the plurality of circuits including a first cell group and a second cell group connected in parallel; wherein said second cell group utilizes an electrolyzable electrolytic solution or generates recombinable gas;

a first power supply unit including a charger/discharger for controlling charge/discharge of said storage battery and adapted to charge said storage battery up to a voltage at which the electrolytic solution of said second cell group is electrolyzed or a voltage at which the generated gas is recombined; and

a second power supply unit connected to said first power supply unit in parallel;

wherein when said second power supply unit is in power shortage, electric power is supplied from said first power supply unit, and when said second power supply unit has surplus power, said storage battery of said first power supply unit is charged by the surplus power up to a voltage at which the electrolytic solution of said second cell group is electrolyzed or to a voltage at which the generated gas is recombined; and

wherein the first cell group includes lithium secondary cells or electrical double layer capacitors, and the second cell group includes lead cells, nickel hydrogen cells, nickel cadmium cells or fuel cells.

22. (New) A distributed power supply system according to claim 21, wherein said first cell group and second cell group are connected in parallel through a current limiter.

23. (New) A distributed power supply system according to claim 21 comprising a plurality of said storage batteries connected in parallel.

24. (New) A distributed power supply system according to claim 21, wherein a withstanding voltage of said first cell group is higher than a withstanding voltage of said second cell group.

25. (New) A distributed power supply system according to claim 21, wherein each of said parallel circuits is formed to connect in parallel with a plurality of said second cell groups connected in series and said first cell group.

26. (New) A distributed power supply system according to claim 21, wherein said first cell group and second cell group share at least one component element.

27. (New) A distributed power supply system according to claim 26, wherein said shared component element is the electrolytic solution.

28. (New) A distributed power supply system according to claim 26, wherein at least one of said first cell group and second cell group has an electrode formed of carbon fiber or carbon nanotube.

29. (New) A distributed power supply system according to claim 21 further comprising:

- a switch for controlling coupling to said first and second power supply units; and
- a controller for controlling said switch in accordance with electric power of said second power supply unit;

wherein said controller controls said switch so that either power is supplied from said first power supply unit when said second power supply unit is in power shortage, or said first power supply unit is charged by the surplus power when said second power supply unit has surplus power.

30. (New) A distributed power supply system comprising:

a storage battery comprising a plurality of first circuits and a plurality of second circuits connected in parallel, each of the plurality of first circuits including a plurality of first cell groups connected in series, and each of the plurality of second circuits including a plurality of second cell groups connected in series, said respective first cell groups being connected in parallel with said respective second cell groups with intermediate terminals, wherein said second cell group utilizes an electrolyzable electrolytic solution or generates recombinaable gas;

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a first power supply unit including a charger/discharger for controlling charge/discharge of said storage battery and adapted to charge said storage battery up to a voltage at which the electrolytic solution of said second cell group is electrolyzed or a voltage at which the generated gas is recombined; and

a second power supply unit connected to said first power supply unit in parallel;

wherein when said second power supply unit is in power shortage, electric power is supplied from said first power supply unit, and when said second power supply unit has surplus power, said storage battery of said first power supply unit is charged by the surplus power up to a voltage at which the electrolytic solution of said second cell group is electrolyzed or a voltage at which the generated gas is recombined; and

wherein each of the first cell groups includes lithium secondary cells or electrical double layer capacitors, and each of the second cell groups includes lead cells, nickel hydrogen cells, nickel cadmium cells or fuel cells.

31. (New) A distributed power supply system according to claim 30, wherein a withstanding voltage of said first cell groups is higher than a withstanding voltage of said second cell groups.

32. (New) A motor vehicle comprising:

a storage battery comprising a plurality of circuits connected in series, each of the plurality of circuits including a first cell group and a second cell group connected in parallel; wherein said second cell group utilizes an electrolyzable electrolytic solution or generates recombinable gas;

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a power supply unit including a charger/discharger for controlling charge/discharge of said storage battery, and adapted to charge said storage battery up to a voltage at which the electrolytic solution of said second cell group is electrolyzed or a voltage at which the generated gas is recombined; and

a motor-generator for driving a motor by electric power supplied by said power supply unit when said motor vehicle is in a powering mode, and for generating electric power when said motor vehicle is in a regeneration mode;

wherein when said motor vehicle generates electric power, said storage battery is charged by the electric power of said motor-generator up to a voltage at which the electrolytic solution of said second cell group is electrolyzed or a voltage at which the generated gas is recombined; and

wherein the first cell group includes lithium secondary cells or electrical double layer capacitors, and the second cell group includes lead cells, nickel hydrogen cells, nickel cadmium cells or fuel cells.

33. (New) A motor vehicle according to claim 32, wherein said first cell group and second cell group are connected in parallel through a current limiter.

34. (New) A motor vehicle according to claim 32, further comprising a plurality of said storage batteries connected in parallel.

35. (New) A motor vehicle according to claim 32, wherein a withstanding voltage of said first cell group is higher than a withstanding voltage of said second cell group.



36. (New) A motor vehicle according to claim 32, wherein each of said parallel circuits is formed to connect in parallel with a plurality of said second cell groups connected in series and said first cell group.

37. (New) A motor vehicle according to claim 32, wherein said first cell group and second cell group share at least one component element.

38. (New) A motor vehicle according to claim 37, wherein said shared component element is the electrolytic solution.

39. (New) A motor vehicle according to claim 37, wherein at least one of said first cell group and second cell group has an electrode formed of carbon fiber or carbon nanotube.

40. (New) A motor vehicle comprising:  
a storage battery comprising a plurality of first circuits and a plurality of second circuits connected in parallel, each of the plurality of first circuits including a plurality of first cell groups connected in series, and each of the plurality of second circuits including a plurality of second cell groups connected in series, said respective first cell groups being connected in parallel with said respective second cell groups with intermediate terminals, wherein said second cell group utilizes an electrolyzable electrolytic solution or generates recombinable gas;  
a power supply unit including a charger/discharger for controlling charge/discharge of said storage battery, and adapted to charge said storage battery up to a voltage at which the

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electrolytic solution of said second cell group is electrolyzed or a voltage at which the generated gas is recombined; and

a motor-generator for driving a motor by electric power supplied by said power supply unit when said motor vehicle is in a powering mode, and for generating electric power when said motor vehicle is in a regeneration mode;

wherein when said motor vehicle generates electric power, said storage battery is charged by the electric power of said motor-generator up to a voltage at which the electrolytic solution of said second cell group is electrolyzed or a voltage at which the generated gas is recombined; and

wherein each of the first cell groups includes lithium secondary cells or electrical double layer capacitors, and each of the second cell groups includes lead cells, nickel hydrogen cells, nickel cadmium cells or fuel cells.

41. (New) A motor vehicle according to claim 40, wherein a withstanding voltage of said first cell groups is higher than a withstanding voltage of said second cell groups.